UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF WEST VIRGINIA
AT CHARLESTON

RON FOSTER, individually, and
FOSTER FARMS, LLC and
MARKETING & PLANNING SPECIALISTS
LIMITED PARTNERSHIP,

Plaintiffs,

v. **Civil Action No. 2:14-cv-16744**

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY and
SCOTT PRUITT, in his official capacity
as Administrator, UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

Defendants

MEMORANDUM OPINION AND ORDER

and

FINDINGS OF FACT AND CONCLUSIONS OF LAW

The court conducted a bench trial on the counterclaim of the defendants (EPA group) against the plaintiffs (Foster group) on August 14 through 18, 2017.[1]

[1] **The court granted summary judgment to the defendants on all of plaintiff's claims against them, except that plaintiffs were granted summary judgment against defendants insofar as an Administrative Compliance Order by EPA purported to find that three of the four headwater streams at issue (R1, R2 and R3) were filled without the necessary Section 404 Clean Water Act Permit.**

The defendants claim that the plaintiffs filled "waters of the United States" without a Section 404 Clean Water Permit to do so when they filled four headwater streams in 2010 on their real estate acquired by them in 2009, known as the "Neal Run Crossing property," near Parkersburg, West Virginia.

I. FINDINGS OF FACT

The following discussion represents the court's findings of fact, made by a preponderance of the evidence.

A. Neal Run Crossing Property

Ron Foster is a citizen of West Virginia who resides in Putnam County, West Virginia. Jt. Stip. ¶ 1. Foster Farms, LLC. is a Kentucky limited liability company. Id. at ¶ 2. Marketing & Planning Specialists ("M&P") is a Nevada limited partnership authorized to do business in West Virginia. Id. at ¶ 3.

Prior to its purchase by Foster, the Neal Run Crossing property was owned by Endurance Group, LLP ("Endurance"). Id. at ¶ 6. While Endurance owned the property, it filled and altered a stream in an area of the property known as "Pad 1" without a Clean Water Act section 404 permit. Id. at ¶ 7. The Pad 1 area and this CWA violation is unrelated to the one at issue in this matter. Before the EPA could begin an enforcement action related

to the Pad 1 CWA violations, Endurance was forced into bankruptcy on March 3, 2009, for reasons unrelated to the CWA violation. Id. at ¶ 9; Aug. 18, 2017 Trial., Tr. at 80-82.

On October 19, 2009, the bankruptcy court issued an order that permitted the sale of the 90-acre Neal Run Crossing property to Foster free of all pre-bankruptcy liability, with the exception that $50,000 be set aside in a trust to fund restoration work to address the Endurance Group's CWA violations. Id. at ¶ 10. The bankruptcy court's order limited the remediation sought by EPA and the U.S. Army Corps of Engineers ("Corps") to an area within 30 feet of the toe of the fill made by Endurance. Jt. Stip. ¶ 10. The restoration work was completed in 2011.

On October 29, 2009, Foster assigned ownership of approximately 40.5 acres of the Neal Run Crossing property to M&P, of which he is the general partner and manager. Id. at ¶ 11. Foster assigned ownership of the near 50-acre balance of the Neal Run Crossing property to Foster Farms, LLC, of which he is the 80% owner. Id. As a practical matter, Foster is the decision maker for both entities with respect to all matters at issue herein.

The Neal Run Crossing property has been divided into five "pads" for development purposes. Id. at ¶ 15. The alleged CWA section 404 violations at issue in this litigation occurred on

the portion of the Neal Run Crossing property known as "Pad 4" or "the Site." Id. at ¶ 4. The Pad 4 area is owned in part by M&P and in part by Foster Farms. Id. at ¶ 16.

Before plaintiffs conducted development work on Pad 4, four streams, identified as "relevant reaches" RR1, RR2, RR3 and RR4, existed on the Site. U.S. Ex. 25; U.S. Ex. 20 at AR0000483-484; U.S. Ex 284. RR1, RR2, and RR3 flowed into RR4 prior to their fill. U.S. Ex. 20 at AR0000483; U.S. Ex. 284. RR4 exited the western boundary of the Site, crossed a neighbor's hayfield, and joined Blackwell Creek (also known as the First Unnamed Tributary to Neal Run). Stokely Test., Tr. at 128-129, 132-133, 137-138; 145; Andreescu Trial Tr. 59-60 (Aug, 15, 2017); U.S. Exs. 279 & 303B.

Blackwell Creek joins the Second Unnamed Tributary to Neal Run. Jt. Stip. ¶ 25. Blackwell Creek is mapped as having intermittent-seasonal flow by the United States Geological Survey. U.S. Ex. 5B at AR0000660. Multiple photographs depict flowing water in Blackwell Creek at various times of year. Lutte Test., Tr. at 45-46; 47-48 (Aug. 16, 2017); U.S. Ex 187 at USEPA0001244, U.S. Ex. 246.

The Second Unnamed Tributary to Neal Run is a relatively permanent water, which flows into Neal Run. Jt. Stip. ¶ 26. Neal Run is a relatively permanent water, which flows into the Little Kanawha River. Id. at ¶ 27. The Little Kanawha River flows into the Ohio River at Parkersburg. Id. A portion of Neal Run, extending 2.4 miles from its confluence with the Little Kanawha River, has been identified by the Corps as a "navigable water of the United States" for purposes of Section 10 of the Rivers and Harbors Act of 1899. Id.

The Little Kanawha River is navigable-in-fact, and has been identified by the Corps as a "navigable water of the United States" for purposes of Section 10 of the Rivers and Harbors Act of 1899. Id. at ¶ 28. The approximate distance (in terms of river/stream miles) from the confluence of RR4 and Blackwell Creek to the designated navigable portion of Neal Run is 3.1 miles. See U.S. Ex. 275; Jt. Stip. ¶ 27.

B. EPA's September 9, 2010 Site Visit

On September 9, 2010, EPA inspectors Stephanie Andreescu and Todd Lutte were in West Virginia visiting other sites unrelated to this case when they decided to visit the Neal Run Crossing property to inspect the Pad 1 violations, which were not yet remedied at the time. Andreescu Trial Tr. 35-36. The visit

was due, in part, to complaints the EPA received from Mr. and Mrs. Blackwell, who owned the neighboring property, about flooding on their property that they believed was caused by the rerouted stream. Id. at 34-35.

While at the property, the EPA inspectors observed a billboard advertising the property for sale by Foster Farms and depicting a development plan superimposed on a topographic map. Id. at 43; 46-48; U.S. Ex. 7 at USEPA001237. Because the billboard showed proposed development in the Pad 4 area where streams appeared to be located, the EPA inspectors went to examine Pad 4. Andreescu Trial Tr. 48. The EPA inspectors did not call the phone number listed on the billboard or otherwise attempt to obtain permission from plaintiffs prior to entering the Pad 4 area. Andreescu Trial Tr. at 48-49.

To reach Pad 4, the EPA inspectors followed Blackwell Creek upstream and then crossed the adjoining hayfield. Id. at 49-50; U.S. Ex. 5A. When they reached the Pad 4 area, the inspectors observed that the Site had been cleared and grubbed of vegetation. Andreescu Trial Tr. 50. The inspectors photographed a stream channel that was later identified as RR4 that had been partially filled with dirt, rocks, and uprooted vegetation. Andreescu Trial. Tr. 50-55; Lutte Test., Tr. at 10-13, 14-15 (Aug.

15, 2017); U.S. Ex. 7 at USEPA001248, 1249, 1250, 1252. Upstream from the disturbance, the inspectors observed the stream channel where Mr. Lutte observed water. Andreescu Trial Tr. 55-56; Lutte Test., Tr. at 15-16 (Aug. 15, 2017); U.S. Ex. 7 at USEPA 001253.

While investigating the stream channel above the disturbance, the EPA inspectors encountered Bryon Scott Moore, a neighbor who represented that he had permission to be on the property to collect firewood and berries. Andreescu Trial Tr. 57; Moore Dep. Tr. at 19. Moore did not actually have permission to be on the property. Moore Trial Tr. 29. Moore offered to show the EPA inspectors where the partially filled streams started, but they were unable to find them due to dense vegetation. Moore Dep. Tr. at 29, 33-34; Andreescu Trial Tr. 57-58; Lutte Test., Tr. at 16.

The EPA inspectors also encountered plaintiffs' contractor, Dave Walters from Walters Excavating while at the Site. Andreescu Trial Tr. 58-59; Lutte Test., Tr. at 17-18 (Aug. 15, 2017). Foster hired Walters Excavating to clear, fill, and level the Site and hired Fox Engineering to design the plans for pad construction on the Site. Foster Test., Tr. at 66-67, 74. The EPA inspectors asked Walters if a section 404 permit had been obtained for the Pad 4 work and advised him that one was likely

required. Andreescu Trial Tr. at 59; Lutte Test., Tr. at 17, 53-54 (Aug. 15, 2017); David Walters Test., Tr. at 113-114 (Aug. 15, 2017). They also gave Walters their contact information and then exited the Site. Lutte Test., Tr. at 17-18 (Aug. 15, 2017).

As the EPA inspectors left the Site, they observed the stream channel as it exited the Site and continued into the neighboring hayfield. Andreescu Trial Tr. 59-61; Lutte Test., Tr. at 18-19 (Aug. 15, 2017). The EPA inspectors observed that the bed, bank, and ordinary high water mark (sometimes, "OHWM") vanished in the center of the hayfield, but that there still existed a concave pathway in the landscape through which water would flow. Andreescu Trial Tr. at 60; Lutte Test., Tr. at 18-22 (Aug. 15, 2017). The pathway reformed a more distinct channel with bed, bank and ordinary high water mark at the end of the hayfield and then joined Blackwell Creek. Andreescu Trial Tr. at 60; Lutte Test., Tr. at 18-22 (Aug. 15, 2017).

C. Events Following the 2010 Site Visit

After the EPA inspectors left the Site, Mr. Walters called Dan Metheny, a professional engineer who worked for Fox Engineering, which was the firm Foster retained to draw up plans for construction on the Site. David Walters Test., Tr. at 113-114 (Aug. 15, 2017). Walters advised Metheny that the EPA had been at

the Site and told him that a permit might be needed for the work that Walters Excavating was conducting on Pad 4. Id.; Metheny Test., Tr. at 144 (Aug. 18, 2017). That day, Metheny emailed Foster, informing him of the conversation Walters had with the EPA and providing him with some information about CWA section 404 permits. U.S. Ex. 157; Foster Test., Tr. 88-89 (Aug. 16, 2017).

Neither plaintiffs nor Metheny contacted the Corps or the EPA to ask whether a permit was required. U.S. Ex. 14 at AR0000374; U.S. Ex. 15 at AR0000384; U.S. Ex. 17 at AR0000365-66; Lutte Test., Tr. at 71-72 (Aug. 15, 2017). Foster did not ask Metheny about his qualifications for determining whether a CWA section 404 permit was required. Foster Test., Tr. at 89 (Aug. 16, 2017); Metheny Test., Tr. at 167 (Aug. 18, 2017). Foster was aware that Metheny and Fox Engineering had been involved with the CWA violations on Pad 1 of the Neal Run Crossing property. Foster Test., Tr. at 89 (Aug. 16, 2017); Metheny Test., Tr. at 167 (Aug. 18, 2017). Although Metheny had worked with CWA section 404 permits through his work on bridges, he had never performed a stream and wetland delineation. Metheny Test., Tr. at 167 (Aug. 18, 2017). A few days later, Metheny advised Foster that a section 404 permit was not needed for the Pad 4 work. Foster Test., Tr. at 89 (Aug. 15, 2017).

Walters Excavating conducted mechanized land clearing, including using earth moving equipment to clear, fill, and level portions of Pad 4 and constructed a sediment pond on Pad 4. Jt. Stip. ¶ 17. Using heavy machinery, Walters Excavating cleared brush, dug out tree stumps, constructed a sediment pond, and placed excavated dirt and rocks on Pad 4. Id. at ¶ 18. Prior to filling Pad 4, Walters observed a stream channel that forked off to the left and right upgradient. David Walters Test., Tr. at 99-101; 121.

Walters Excavating continued working in Pad 4 after the EPA's visit. Each Walters Excavating invoices listed a description of the work they performed each day. Seth Walters Test., Tr. at 56-57 (Aug. 18, 2017). During the three days following the EPA's Site visit, September 10 through September 12, 2010, Walters Excavating "[c]leared brush and cleaned off for new haul road leading to outlet 3." U.S. Ex. 16 at AR0000410. Outlet 3 references the location where the sediment pond is now located and the haul road would permit access for the machinery to build the sediment pond and to eventually bring fill down to the Site. Seth Walters Test., Tr. at 58 (Aug. 18, 2017). The sediment pond was then constructed. U.S. Ex. 16 at AR0000410; Metheny Test., Tr. at 168 (Aug. 18, 2017); David Walters Test., Tr. at 111-112. Walters Excavating's work filling the Pad 4 area was completed in

November 2010. U.S. Ex. 16 at AR0000402-408. M&P paid Walters Excavating $352,053.73 for the work they performed. Id.

After the Site visit, Andreescu confirmed that plaintiffs had not obtained a section 404 permit for the work on Pad 4. Andreescu Trial Tr. at 86. She then completed an inspection report and a photograph log from the Site visit. U.S. Ex. 9; Andreescu Trial Tr. at 68-70, 86. Andreescu reviewed geographic information system ("GIS") data for the Site, which included historic aerial images, topographic contour lines, digital elevation data, and United States Geological Survey mapping. Andreescu Trial Tr. at 70-71; U.S. Exs. 5A, 5B. She also reviewed scientific literature on the ecological importance of headwater streams to downstream waters. Andreescu Trial Tr. at 82-86; U.S. Exs. 10-12. From this evidence Andreescu concluded that the stream channel on the Site was a headwater stream that flowed from Pad 4, through the hayfield and connected to Blackwell Creek. Id. at 86; U.S. Ex. 9.

In December 2010, the EPA sent CWA section 308 information requests to Foster Farms and Fox Engineering. Andreescu Trial Tr. at 87; U.S. Exs. 13-14. Fox Engineering, Foster Farms, and Walters Excavating responded to the information requests in December 2010. U.S. Ex. 24-26.

In February 2010, Ron Foster hired Jacob White of Randolph Engineering to conduct a wetland and stream delineation for Pads 4 and 5. Jt. Stip. ¶ 20; U.S. Ex. 20. Randolph Engineering identified eleven "stream assessment reaches" or "SARs" on Pads 4 and 5. Jt. Stip. ¶ 22. On Pad 4, Randolph Engineering delineated SAR 3 ("RR4"), SAR3(a)(1) and (a)(2) (collectively "RR3"), SAR3(b)(1) and (b)(2) (collectively "RR2"), and SAR3(c) ("RR1").[2] Jt. Stip. ¶¶ 23, 24. RR1 and RR4 were completely filled on the Site and portions of RR2 and RR3 were filled on the Site. U.S. Ex. 20. Randolph Engineering classified RR4 as an intermittent stream and RR 1, 2, and 3 as ephemeral streams. Id. at AR0000475. White has reaffirmed his delineation of RR1, RR2, RR3, and RR4. White Test., Tr. at 104 (Aug. 18, 2017). Randolph Engineering concluded that all of the stream assessment reaches were likely jurisdictional under the CWA. U.S. Ex. 20 at AR0000475-76. At trial, White indicated that his conclusion about whether the streams were jurisdictional changed after reading the GAI Report obtained by Foster, which indicated that there was no hydrological connection across the hayfield. White Test., Tr. at 101-102. White was not made aware that Dana Pehrman, an expert engaged by Foster, visited the Site in July,

[2] Although the streams were not known by their "relevant reaches" or "RR" names at this time, the court will only refer to the streams by these names to prevent confusion.

2015, when water was flowing across the hayfield and into Blackwell Creek. Id. at 118.

Randolph Engineering submitted a wetland and stream delineation report ("Randolph Report") dated March 10, 2011 to the Corps for verification and a jurisdictional determination. Jt. Stip. ¶ 22; U.S. Ex. 20; Hemann Test., Tr. at 155 (Aug. 15, 2017).

In addition to delineating and identifying the streams on the Pad 4 site (now RR 1, 2, 3 and 4), Mr. White filled out and included in the Randolph Report forms providing information used in connection with the Corps of Engineers Functional Calculator for High Gradient Headwater Streams in Eastern Kentucky and Western West Virginia HGM Guidebook. These forms provided the Corps with information regarding certain features of the streams being assessed that correlate with functions being performed by those streams. U.S. Ex. 20 at AR0000515-0563; White Test., Tr. at 114:15-115:3, 125:5-12.

Rick Hemann, of the Corps, sent the Randolph Report to Andreescu for the EPA to review in April 2011. Andreescu Trial Tr. at 99-103; U.S. Ex. 19. Andreescu reviewed the Randolph Report, which made her aware that plaintiffs had placed a substantial amount of fill in the Pad 4 streams since her September 9, 2010 Site visit. Andreescu Trial Tr. at 107-108.

In May 2011, Andreescu and Pam Lazos, counsel for the EPA, visited the Site with Foster. Id. at 110-111. Andreescu observed that plaintiffs had placed a large quantity of fill on the Site, and had constructed a sediment pond. Id. at 114-118; U.S. Ex. 22. Andreescu concluded that the additional filled streams were jurisdictional based upon her observations during the two Site visits, review of Geographic Information System ("GIS") data, scientific literature, and the Randolph Report. Andrescu Trial Tr. at 149-50.

Hemann verified the Randolph Report by reviewing aerial photographs, topographic maps, wetland inventory maps, and by conducting two site visits; and in June 2011, he inspected the Pad 4 area and in July 2011, he inspected the Pad 5 area. Hemann Test., Tr. at 157-58; 158-162 (Aug. 15, 2017). Hemann concluded that the filled streams, RR1, 2, 3, and 4, were jurisdictional under the CWA. U.S. Ex. 25. Hemann determined that RR4 was an intermittent-seasonal stream based on the watershed's 30-acre size, and the characteristics of RR5 and RR10, which were streams in Pad 5 that had not been filled. Hemann Test., Tr. 167-68 (Aug. 15, 2017); U.S. Ex. 173 at MPS001242; U.S. Ex. 25. Hemann also concluded that RR1, 2, 3, and 4 have a significant nexus to downstream traditional navigable waters. U.S. Ex. 25.

In September 2011, Andreescu and Lutte visited the Neal Run Crossing property with Foster to review the Pad 1 restoration work and again inspected the Pad 4 area. Andreescu Trial Tr. at 123.

In October 2011, Foster submitted an after-the-fact permit application to the Corps. U.S. Ex. 152; Hemann Test., Tr. at 171-72 (Aug. 15, 2017). The application stated that 1,970 linear feet of stream had been filled with 100,000 cubic yards of fill material. Id.

From October 2011 to December 2011, the EPA and the Corps conducted internal discussions to determine which agency would take the lead in addressing the Site violations. Hemann Test., Tr. at 173-74. In December 2011, the EPA and the Corps had a telephone conference and it was decided that EPA would be the lead agency in addressing the Pad 4 violations. Andreescu Trial Tr. at 135-36; U.S. Ex. 26.

On January 3, 2012, Lazos emailed Foster and notified him that the EPA had assumed the lead and would be seeking penalties for the violations. U.S. Ex. 103. On January 24, 2012, the EPA issued an Administrative Compliance Order ("ACO") to Foster Farms for the Pad 4 violations. U.S. Ex. 28.

In February 2012, Foster notified Andureescu by telephone and letter that the ACO should have been issued to M&P instead of Foster Farms. Andreescu Trial Tr. at 143-45; U.S. Ex. 29. That same month, Foster contacted the Corps and requested that they complete the verification of the Randolph Report and provide him with a jurisdictional determination. U.S. Ex. 153. On February 22, 2012, the Corps sent Foster a letter notifying him that it had determined that the Pad 4 streams were covered by the CWA. U.S. Ex. 30.

On March 30, 2012, Foster sent the EPA a letter attaching a proposed mitigation plan for the Site and requesting information supporting the EPA's jurisdictional determination. U.S. Ex. 31. On April 5, 2012, Andreescu responded to Foster's letter again stating that the EPA was the lead agency and summarized the EPA's previous findings that the filled streams were jurisdictional. U.S. Ex. 32; Andreescu Trial Tr. 153-157.

In April 2012, Foster attempted to appeal the Corps' jurisdictional determination. Foster Trial, Tr. at 7-8 (Aug. 18, 2017). However, because the EPA had assumed the lead on the case, the Corps could not accept an appeal. See 33 C.F.R. § 331.11. At Foster's request, the EPA provided additional information about the basis for the jurisdictional determination in a May 30, 2012

letter. U.S. Ex. 194. Foster thereafter submitted written information from Randolph Engineering and Fox Engineering to support his assertion that the streams were not covered by the CWA. U.S. Ex. 227. Andreescu considered the materials provided by Foster but determined that they did not alter the conclusion that the Pad 4 streams were within CWA jurisdiction. Andreescu Trial Tr. at 157-159, 167-169.

In September 2012, the EPA provided comments on plaintiffs' proposed mitigation plan and requested a revised plan based on those comments. Id. at 173-75; U.S. Ex. 35.

D. Streams' Physical Contributions

1. The Pad 4 Streams

Dane Pehrman, Foster's expert, identified "a number of different tributaries" existed that flowed into where the sediment pond now exists prior to its construction. Pehrman, Test. Tr. 157-58 (Aug. 17, 2017). Based upon his review of aerial photographs, he concluded that RR4 flowed intermittently on the Site prior to its fill. Id. at 160-61.

Peter Stokely, the EPA's expert in aerial photographic interpretation, viewed pre-disturbance aerial photographs of the Pad 4 area and identified RR2 and RR3, which were shown flowing

into RR4 prior to the construction of the sediment pond. Stokely Test., Tr. at 128-136 (Aug. 16, 2017); see e.g., U.S. Exs. 317-320 (aerial photographs of the Site). Stokely also viewed low-altitude oblique images from which the stream channels of RR2 and RR3 were visible and water can be seen flowing from the undisturbed sections of RR2 and RR3 onto the filled sections of those same streams. Stokely Test., Tr. at 140-42 (Aug. 16, 2017); U.S. Exs. 220, 222, 224. From this evidence, Stokely opined that RR2 and RR3 were tributaries to RR4. Stokely Test., Tr. at 144-45 (Aug. 16, 2017).

During the September 9, 2010 Site visit, EPA inspectors Andreescu and Lutte observed and photographed the partially disturbed RR4. Andreescu Trial Tr. at 53-54; U.S. Ex. 7 at USEPA001248-1249; Lutte Test., Tr. at 10-13, 14-24 (Aug. 15, 2017). The undisturbed portion of RR4's channel was visible on the Site, identifiable by a lack of vegetation and substrate on the bottom of the channel, which is "debris, rocks, cobble, stone, [and] sediment," and an ordinary high water mark. Lutte Test., Tr. at 11-12, 80 (Aug. 15, 2017); U.S. Ex. 7 at USEPA001248. Upstream of the disturbance, Lutte observed RR4's channel, an ordinary high water mark, and also observed water in the channel. Id. at 15-16, 80; U.S. Ex. 7 at USEPA001252-53.

Stokely visited the Site on May 12, 2015 and was able to observe the unfilled portions of RR2 and RR3. Stokely Test., Tr. at 138 (Aug. 16, 2017). Although he did not see RR1 when he was mapping the Pad 4 streams by viewing aerial photography, he observed RR1 when he visited the Pad 4 area. Id. at 138-39.

The United States' experts on stream ecology and hydrology, Drs. Arscott and Dow visited the Neal Run Crossing property on May 12, 2015. They observed and photographed the portions of RR2 and RR3 that had not been filled on the Site and observed bed, banks, and water in those streams. Arscott Test., Tr. at 196-199 (Aug. 16, 2017); U.S. Exs. 261-263. They also observed water coming from the fill where RR1 and RR4 were located on the Site as it flowed into the sediment pond and they took in-situ water chemistry of the water emerging into the fill. Arscott Test., Tr. at 209-11; U.S. Exs. 254, 261.

Dr. Dow also used software called "Terrain Analysis Using Digital Elevation Model" ("TauDEM") to map the Pad 4 streams prior to his visit to the Site. Dow Test., Tr. at 77-79, 82-83 (Aug. 17, 2017); U.S. Ex. 303C. When he arrived on the Site, the unburied portions of RR2 and RR3 were located in the places TauDEM predicted they would be. Dow Test., Tr. at 119-20 (Aug. 17, 2017). TauDEM also mapped RR1 and RR4 as flowing prior to their

fill. Id. at 99-100. Dr. Dow was able to confirm the locations that TauDEM mapped RR1 and RR4 to flow prior to their fill by recording and matching the locations where they observed water emerging from the fill in their May 2015 Site visit. Id.

2. RR4 as it Crosses the Hayfield

a. Stream Characteristics

When RR4 exits the Pad 4 area, it flows through a stream OHWMchannel with a bed, bank and ordinary high water mark into the neighboring hayfield for approximately 125 feet. Andreescu Trial Tr. 60; Lutte Test., Tr. at 18-19 (Aug. 15, 2017); Pehramn Test., Tr. at 208, 210; Fuller Dep. Tr. at 88, 89-90; Pehrman Test., Tr. at 218-19 (Aug. 17, 2017). The stream channel, as it enters the hayfield from Pad 4, is visible in multiple photographs. U.S. Exs. 165 at MPS001105, 221, 223, 276, 281-82.

Then, for approximately 120 feet near the center of the hayfield, there is a loss of ordinary high water mark, bed, and bank, but a confined concave pathway is visible in person and in viewing the landscape in low-aerial oblique and aerial photographs. Stokely Test., Tr. at 145-46 (Aug. 16, 2017); Pehrman Test., Tr. at 217-18, 221 (Aug. 17, 2017); U.S. Exs. 116 at AR0001043, 221, 223, 276, 281, 282, 316, 320, 322. Lutte additionally observed "[d]arker vegetation, more robust vegetation

due to the influence of the water increased to the roots" and that he could see "the path that the stream was taking to get to the end of the hayfield." Lutte Test., Tr. at 19-20 (Aug. 15, 2017).

Beyond the center 120 feet of the hayfield, a more defined channel with bed and bank and ordinary high water mark reappears for approximately 100 feet before it flows into Blackwell Creek. Andreescu Trial Tr. at 60; Lutte Test. Tri. at 20-22, 36-37 (Aug. 15, 2017); Lutte Test. Tr. at 42-43 (Aug. 16, 2017); Pehrman Test., Tr. at 219-220 (Aug. 17, 2017); Fuller Dep. Tr. at 96-97, 106; Stokely Test., Tr. at 146-47 (Aug. 15, 2017); U.S. Ex. 116 at AR0001045-46. As noted by Dr. Dow, streams are "dynamic" and "change all along a stream network for any number of reasons." Dow Test., Tr. at 112 (Aug. 17, 2017).

The hayfield is used to grow and harvest hay, and has been used for that purpose for decades. Carr Test., Tr. at 128-29 (Aug. 15, 2017). The hayfield is cut once or twice a year. Id. at 129-30. A tractor is used to cut, rake, and bale the hay. Id. at 130. The mowing and raking of the hayfield over time can flatten the stream bed and obscure certain features. Fuller Dep. Tr. at 113.

In montane regions, headwater streams frequently flow sub-surface near their confluence with a larger stream. Arscott Test., Tr. at 13-15 (Aug. 17, 2017); U.S. Ex. 38. The Corps' guidance for West Virginia and surrounding regions states:

> For many headwater streams, during low flow seasons, the flow will go subsurface near the confluence of larger streams due to the aggradation of the bed from alluvial deposits. We recommend walking upstream for several meters until you are out of the aggraded zone before establishing the reach. If the reach is established directly upstream of a confluence, the reach might not be representative of the stream channel and might falsely identify it as a [non-relatively-permanent water].

U.S. Ex. 38. The subsurface flow is caused by the transition of land from a higher gradient to a lower gradient, which results in sediment being deposited in shallow areas. Id. at 14-15. This causes some surface flow to percolate into the sediment through shallow subsurface paths before reemerging downslope at the surface. Id. at 16-17.

The loss of defined channel in the center of the hayfield is also caused by the change in speed and force of the flow as it comes from the sloped Pad 4 area into the flattened hayfield. Arscott Test., Tr. at 13-16, 50 (Aug. 17, 2017); Dow Test., Tr. at 110-111 (Aug. 17, 2017). Because of the reduction in energy as the water travels off the sloped Pad 4 area into the hayfield, it is less able to carve a channel into the center of

the hayfield. Arscott Test., Tr. at 50 (Aug. 17, 2017); Dow Test., Tr. at 110-11 (Aug. 17, 2017).

The Corps' instructions for identifying jurisdictional waters state that "a natural or manmade discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices)" and advises inspectors to "look for indicators of flow above and below the break." U.S. Ex. 175 at MPS001240 n. 6; Lutte Test., Tr. at 69 (Aug. 15, 2017).

The reconstitution of RR4's channel at the downgradient end of the hayfield is caused by the rechannelization of water as it comes across the hayfield. Arscott Test., Tr. at 16-17 (Aug. 17, 2017); Dow Test., Tr. at 111 (Aug. 17, 2017); Pehrman Test., Tr. at 211 (Aug. 17, 2017).

The hayfield is not a nonjurisdictional swale. The definition of a swale from the Corps' manual does not include features that have a bed, banks, and ordinary high water marks upstream and downstream. Lutte Test., Tr. at 71 (Aug. 15, 2017). Because the stream, as it travels through the hayfield, has a confined flow path with bed, banks, and ordinary high water marks both upstream and downstream of the center of the hayfield, it more closely fits in the definition of a "natural or manmade

discontinuity in the OHWM" within a jurisdictional stream than that of a swale. U.S. Ex. 175 at MPS001240 n. 6.

b. Water Flow Across the Hayfield

West Virginia's Statewide Addressing and Mapping Board ("SAMB") mapped RR4 as it flows from the Site across the hayfield to the Blackwell Tributary. U.S. Ex. 34; Dow. Test., Tr. at 87-88.

In response to the EPA's information request, Foster described RR4's flow path from the Site, stating "[d]rainage was flowing across an open field into the main stream. . . ." U.S. Ex. 15 at AR0000385. RR4's flow path across the hayfield is visible in many aerial photographs taken before and after plaintiffs' filling activities. Stokely Test., Tr. at 128-138, 145-49 (Aug. 17, 2017); Dow Test., Tr. at 102-104; U.S. Exs. 221, 223, 276, 281-282.

In July 2015, Pehrman observed and photographed water flowing from the Site and across the hayfield into Blackwell Creek. Pehrman Test., Tr. at 207. When Pehrman visited the hayfield, he could see the water flowing from the Site toward Blackwell Creek when he pulled apart the tall hay in the center of the hayfield. Id. at 183-84; U.S. Ex. 265. Water was flowing fifteen feet wide across the center of the hayfield. Id. Beyond

the center 120 feet, the broad flow of water, as found by Pehrman, "began to concentrate, eventually forming a defined channel with bed and banks. From this point, flow continued through the channel for approximately 100 feet where it flowed into [Blackwell Creek]." Id. at 219-220.

Using the metadata produced with the photographs taken by Pehrman, Dr. Dow was able to map the points at which Pehrman took pictures in the hayfield. U.S. Exs. 265, 315; Dow Test., Tr. at 105-107. The locations where Pehrman took photos in the center of the hayfield showed water flowing where the TauDEM model predicted RR4 would cross the hayfield on the way to Blackwell Creek. Dow Test., Tr. at 107-114.

Larry Carr, who owned the hayfield, testified that he observed water flow across the hayfield when it rains. Carr Test., Tr. at 132-34 (Aug. 15, 2017). Using arrows, Carr illustrated the flow path of RR4 on an aerial photograph showing the flow from the Site and across the hayfield to Blackwell Creek. U.S. Ex. 169. Carr also testified that the hayfield would be dry when he cut hay, which would occur in late May or early June and the end of August or late September. Carr Test., Tr. at 129, 134 (Aug. 15, 2017).

Fuller's determination that there is no subsurface flow of water in the hayfield is insufficient to rebut the evidence that water flows across the hayfield into Blackwell Creek. Fuller observed the stream channel on either side of the hayfield. Fuller Dep. Tr. at 88-90, 96-97, 106. Fuller only took two samples in the center of the hayfield. Id. at 134, 138. Most significantly, Fuller testified that her analysis would have been different if she had been made aware that flow had been observed across the hayfield. Id. at 142-43.

E. Stream Characteristics

1. General Characteristics of Headwater Streams

The channels of a river system start out small, as 1st-order streams, and quickly grow in an almost exponential fashion as small and intermediate (2nd to 5th order) sized channels connect with one another to form large rivers (usually 6th-order or greater). Arscott Test., Tr. at 171-172 (Aug. 16, 2017). Stream orders increase when two lower-order streams merge. Id. First, second, and third order streams are collectively described as headwater streams. Id.

The water in headwater streams is the medium in which materials and organisms are transported down the stream network. The water contains mineral particles and organic debris like

leaves, sticks, twigs, fish and insects, and also dissolved substances. Id. at 182. The dissolved substances include natural substances (usually organic molecules which are collectively known as dissolved organic carbon or "DOC") and, in human dominated landscapes, there are also anthropogenic substances that are carried by the waterways. Id.

Headwater streams are also bioreactors. They are host to aquatic life, bacteria, fungi, algae, aquatic plants, insects, and sometimes other vertebrates. Id. at 182-83. There are biogeochemical processes by which the organisms, such as plants and bacteria, intake nutrients and transform materials to be used by downstream organisms. Id. For example, nitrogen can be transformed from one form to another and retained in the headwater streams to grow biological life or processed back up to the atmosphere or transmitted downstream or into subterranean compartments. Id.

For a river system flowing through the Western Allegheny Plateau, wherein the Neal Run Crossing property is located, forest is the predominant natural land cover. Id. at 230-31; U.S. Ex. 10 at AR0000004-0005. Small streams are not very wide and trees growing on the banks form a complete canopy over the channel. Shading by trees limits the light available for photoautotrophs

like algae, but trees also provide large amounts of particulate (non-dissolved) food for decomposers (also known as biofilms, which include bacteria, fungi and algae) such as leaves, fruits, seeds, and twigs/trunks, as well as dissolved food which can be used by micro-organisms. Id. The dissolved food is produced by the leaching of organic molecules from leaves and other parts of trees or soil organic matter both in the stream and on the forest floor. Id.

Small headwater streams, like those at issue in this litigation, accumulate leaf litter supplied directly during leaf fall and subsequently as fallen leaves are blown by wind or carried by storm-derived precipitation runoff moving across the forest floor. Id. at 230-31; U.S. Ex. 10 at AR0000005-0006. Ground and rain water, typically low in DOC, may pass through or over the organic-rich sediments and leaf litter in fringing riparian zones and wetlands and pick up higher concentrations of DOC that is then transported downstream where it may supplement the energy for instream biotic communities. Id. AR0000005-0006

As the river system increases in size downstream, the banks get farther apart and openings in the tree canopy allow more sunlight to support in-situ production of food like algae and plants. U.S. Ex. 283. Although 1st-order streams are small,

their influence is demonstrated by the fact that they contribute about 65% of the nitrogen flux to second order streams and about 40% to 4th-and higher order rivers. Id.

Downstream aquatic life is linked to upstream aquatic life and the linkage promotes habitat diversity and biodiversity, which is a measure of the variety of different lifeforms living within an ecosystem or habitat. Arscott Test., Tr. at 230:15-231:7 (Aug. 16, 2017); U.S. Ex. 10 at AR0000004-0006; U.S. Ex. 11 at AR0000029-0031. For example, macroinvertebrates eating leaves in headwater streams transform the leaves from large particles to small particles, which can then be fed upon by downstream macroinvertebrate communities whose species have specialized mouth parts and other structures or techniques enabling them to filter out the small organic particles being transported in the water column. Id. When headwater streams are impaired, the food web is altered, which impacts the viability of downstream feeding species. Arscott Test., Tr. at 22-23 (Aug. 17, 2017).

2. Physical Characteristics of the Filled Streams

Dr. Dow used TauDEM to calculate the watershed size and record the boundaries of RR4 in Pad 4, and RR5 and RR10 in Pad 5. Dow Test., Tr. at 80-81 (Aug. 17, 2017). Dr. Arscott determined that the watershed area for RR4 is approximately five percent of

Blackwell Creek. Id. at 91-92. From that Dr. Dow inferred that approximately five percent of Blackwell Creek's flow comes from RR4. Id.

Because Drs. Arscott and Dow were unable to quantify the flow and sediment that RR1 contributed downstream prior to the fill, they analyzed a three-year hydrological study by the United States Geological Survey of Robinson Run and North Bend Run, two streams less than 50 miles from the Site. Id. at 115-17. Like the Pad 4 streams, these streams did not flow year around, were of similar size, and had similar characteristics. Id. One of the comparable streams had water in it 90 percent of the time, while the other had water flowing in it 65 percent of the time. Id. Based on this information, Drs. Arscott and Dow concluded that RR4 likely had comparable hydrological patterns to North Bend Run and Robinson Run. Id.

3. Chemical Contributions of the Filled Streams

Drs. Arscott and Dow also measured the chemical properties, which included the specific conductivity, temperature, pH, and dissolved oxygen, at the unfilled reaches of RR2 and RR3, and the water emerging from the fill that buried RR1 and RR4 as it flowed into the sediment pond. Id. at 187-88; U.S. Ex. 285, Figure 3; U.S. Ex. 295, Table 5. They also measured the chemical

properties from RR5 and RR10, two undisturbed streams on Pad 5, as well as the Blackwell Tributary, the Second Unnamed Tributary to Neal Run, Neal Run, and eight similar headwater streams near the Neal Run Crossing property. U.S. Ex. 295, Table 5.

The ranges of specific conductivity (a measure of salinity), temperature, pH, and dissolved oxygen observed in RR2, RR3, RR5, and RR10 are within the range that support the aquatic biota typically found in headwater streams. Arscott Test., Tr. at 225-226 (Aug. 16, 2017). The specific conductivities of RR2, RR3, RR5 and RR10 are consistent with the other nearby headwater streams. Id. at 226-228; U.S. Ex. 290 (Figure 13). Downstream waters had a broader specific conductivity range than those on the Neal Run Crossing property, and the specific conductivity generally increased downstream. Arscott Test., Tr. at 225-226 (Aug. 16, 2017); U.S. Ex. 295, Table 5 & U.S. Ex. 296.

Based on the level of specific conductivity of the water in RR2 and RR3 (and the aquatic life identified therein, discussed below) Drs. Arscott and Dow determined that the water in those channels was not only from a rain event that occurred the previous day. Arscott Test., Tr. 204-205 (Aug. 16, 2017). "[S]pecific conductivity is a measure of water's ability to conduct electricity . . . [which] is directly related to how much is

dissolved in the water." Id. The specific conductivity of the water found in RR2 and RR3 demonstrated that it had significant contact time with rocks, minerals and soils, contrasted with rain water, which has a very low specific conductance. Id. at 205, 208-209.

The water emerging from the fill where RR4 was buried had an elevated specific conductivity compared to other streams with a similar amount of forest cover that was sampled by Drs. Arscott and Dow. Id. at 227-228 (Aug. 16, 2017); U.S. Ex. 295. The increased specific conductivity "indicates this water is percolating through the pad, interacting with recently crushed up and deposited material, dissolving some of the salts in that material," which causes the specific conductivity to increase. Id.

The specific conductivity of streams generally increases due to salt, chloride, sodium chloride, and calcium chloride salts as the landscape changes from forests and becomes "dominated by other land uses." Arscott Trial, Test. (Aug. 16, 2017) at 226. Headwater streams help dilute downstream connections where there are greater inputs in waterways. Id. at 23-24 (Aug. 17, 2017). When headwater streams are altered or destroyed, there is less dilution for downstream waters, which increases inputs such as

sodium-chloride in downstream waters. Id. As more headwater streams are destroyed, the recreational and quality of downstream waters is impaired. Id.

Drs. Arscott and Dow also collected water samples at eight sites for the analysis of nutrients and ions, including from RR2, the sediment pond, Blackwell Creek, The Second Unnamed Tributary to Neal Run, and Neal Run. Id. at 190 (Aug. 16, 2017); U.S. Ex. 296. Of the seven ions sampled, aluminum (Al^{3+}), calcium ($Ca2^{+}$), sodium (Na^{+}), chloride (Cl^{-}), and sulfate (SO_4^{2-}), had an increased concentration downstream. U.S. Ex. 291. Total nitrogen also increased as the water flowed downstream. Id.; Arscott Test., Tr. at 228-29 (Aug. 16, 2017). The biota that live in freshwater systems are typically sensitive to higher salt concentrations, and some species are more sensitive to salt than others. Id. at 23 (Aug. 17, 2017). Species sensitive to salt include some mayflies, stoneflies, caddisflies, and other aquatic invertebrates and fish; "the salt can impair their reproductive potential and cause population decline." Id.

The concentration of sodium and chloride found by Drs. Arscott and Dow increased as the percent of the watershed classified as "barren/developed" increased in the sites sampled by them. U.S. Ex. 292. As headwater streams are altered or

destroyed, downstream navigable waters are less able to dilute inputs from the water, which eventually impairs the navigable water. Arscott Test., Tr. at 23-24 (Aug. 17, 2017).

4. Biological Contributions of the Filled Streams

Drs. Arscott and Dow analyzed the aquatic invertebrates located in the Pad 4 area and other nearby sites to determine how long the streams contain water as well as the types of life that live in the streams. Id. at 199-201 (Aug. 16, 2017). "Aquatic insect life history moves from an egg to a larvae, [and] sometimes to a pupae depending on the species of aquatic insect. But some species skip the pupal stage and emerge as an adult." Id. at 199-200. The "larvae of aquatic insets are obligate aquatic organisms" which means they "require to be in water to develop to the point in which they would metamorphose to become an adult." Id.

Drs. Arscott and Dow collected a number of different aquatic lifeforms living in the unburied reaches of RR2 and RR3, and in RR5, RR10, Blackwell Tributary, the Second Unnamed Tributary to Neal Run, and Neal Run. U.S. Exs. 297, 314.

Six taxa were collected from the RR2, including two mayfly species, crayfish, and aquatic worms. Id. Both of the mayfly species have univoltine (1-year life) cycles with adults laying eggs in May, June, and/or July when they have typically emerge as adults. Arscott Test., Tr. at 201-203 (Aug. 16, 2017). Adult females of these species could have dispersed to this site in May-July 2014 and laid eggs in this stream channel. Id. Once mayflies hatch from the egg stage to the larvae stage, they must be submerged in water (inundated) or they die. Id. These species of mayfly larvae found in the unburied reach of RR2 typically hatch from eggs in August-October. Id. The mayfly larvae could not have flown or crawled upstream to the sampling point in RR2 from downstream habitat. Id. at 203. Mayfly larvae require being inundated to develop through the winter and emerge in spring. Id. at 201-203. Thus, the presence of the mayfly larvae suggests that RR2 had been flowing or was wet with sufficient aquatic areas to support these species. Id.

The presence of crayfish in the unburied portion of RR2 also evidences that water exists there for longer periods of time. Id. at 206. The presence of crayfish in this habitat in the juvenile stage suggest that sexually mature individuals reproduced in the vicinity of where the experts sampled. Id.

Their presence at this site is evidence of flow for a longer period of time, to support the crayfish. Id.

Drs. Arscott and Dow identified eight taxa from the 23 lifeforms collected at the sampling point in RR5. U.S. Exs. 297, 314. Dr. Arscott identified an additional species of mayfly, as well as species of the following aquatic macroinvertebrates: stonefly, dobsonfly/fishfly, caddisfly, isopod, and flatworms. U.S. Ex. 297. All of the mayfly taxa are reported to be univoltine and none exhibits tolerance to desiccation. Id. In addition, the stonefly and caddisfly are univoltine; however, the stonefly has been observed to exhibit some tolerance to drought. Id. The presence of these taxa provide evidence that RR5 flowed for "a substantial period of time" prior to their visit. Arscott Test., Tr. at 221 (Aug. 16, 2017); U.S. Ex. 297.

Seven taxa were identified from the 11 individual lifeforms collected in the RR10 sampling point. U.S. Ex. 297; U.S. Ex. 314. The two mayfly species identified are univoltine and have demonstrated no tolerance to drought. U.S. Ex. 297. The non-biting midge is likely to be a multi-volitine species (multiple generations per year). Id. The three crustaceans collected included juvenile crayfish. Id. Their presence

indicates that there is a longer duration of flow in RR10. Arscott Test., Tr. at 221-222 (Aug. 16, 2017).

Two taxa were identified from seven individual lifeforms collected from the unburied portion of RR3, an isopod (an order of crustaceans) and a flatworm. U.S. Ex. 314. The low abundance and life histories of these organisms suggests "that stream channel [RR3] experiences a greater degree of drying." Arscott Test., Tr. at 207-208 (Aug. 16, 2017).

Based on their observations of the unfilled reaches of RR2 and RR3, and the similar undisturbed streams on and near Pad 5 (RR5 and RR10), Drs. Arscott and Dow concluded that, prior to filling, RR4 was an intermittent stream with flow for 4-8 months of the year. Arscott Test., Tr. at 220 (Aug. 16, 2017); Tr. at 10-11 (Aug. 17, 2017). Dr. Arscott also concluded that RR2 had intermittent flow and that RR5 and RR10 had nearly perennial flow. Arscott Test., Tr. 220; 221-22 (Aug. 16, 2017).

5. Connection of Filled Streams

Dr. Arscott opined that prior to being filled, RR4 flowed from the Site, across the hayfield and into Blackwell Creek. Id. at 219 (Aug. 16, 2017). He based this opinion on aerial photographs, photographic evidence, field visits and TauDEM modeling. Id. at 220; 231-232. Dr. Arscott also concluded that

there is not only a hydrologic connection across the hayfield, but that a chemical and biological connection is maintained as well. Id. at 232-33.

F. Accountability of the Foster Group

When Foster learned in early September 2010 that EPA inspectors, Andreescu and Lutte, had informed his excavator, who had just started on the job on Pad 4, that a § 404 permit was likely needed for the streams about to be filled, he engaged Fox Engineering Company, who had designed his proposed project, to advise whether a § 404 permit was required. Dan Metheny, an engineer with Fox, told him it was not.

There is no indication that Foster was aware that Mr. Metheny was not qualified to make that determination. As a consequence, the excavating and fill work continued for some two months or more in 2010, for which Walters Excavating was paid $352,000. No further such work has since been done.

Once question was raised by EPA representatives directly with Foster in early 2011, he engaged Randolph Engineering to make a jurisdictional determination of whether the streams that had been filled fell within the jurisdiction of the Corps and EPA as "waters of the United States." The Randolph report, done by Jacob

White, found that those streams were properly considered as within the jurisdictional determination by the Corps that they were waters of the United States. Once the EPA issued the Administrative Compliance Order in January 2012 finding that the four streams were waters of the United States, Foster undertook to find why that decision was made. In early 2013, Foster engaged GAI to study the issue. As has been noted, again in July 2015 Foster engaged Dane Pehrman to make the study that he reported, which proved to be favorable to the EPA's view.

Throughout the period from November 2010 to date, the Neal Run Crossing property has remained fallow by virtue of the pending dispute between the Foster group and EPA. In effect, Foster has been precluded from developing the property, as a result of which he has sustained a considerable financial setback through an inability to obtain any yield on his investment.

The Neal Run Crossing property itself does not appear to have gained in value except for that apparently attributable to the $352,000 worth of work done by Walters Excavating. The United States points to the assessed value of a substantial portion of the property that cost $925,000 when purchased from Endurance. The portion of the property, according to the United States, on which the majority of the filled-in streams are located is

assessed for the year 2017 in the amount of $475,000, being in West Virginia 60% of the market value. That in turn would indicate the market value to be $791,667. That indicates a difference of $316,667, which is less than the $352,000 in value added through excavation work.

The court concludes that by any measure, the Foster group has sustained a substantial loss by virtue of the dispute with EPA, quite apart from the civil penalty which may be imposed and the mitigation which may be required of Foster as a result of his failure to obtain a § 404 permit to fill the streams at issue.

II. FINDINGS CONCERNING WITNESS CREDIBILITY

A. Stephanie Andreescu and Todd Lutte

The court credits the testimony of Andreescu and Lutte. The demeanor of each of these witnesses (Andreescu by video deposition and Lutte in person) was forthright and appeared concerned with truthfully recounting the events of this case. That Lutte and Andreescu viewed water on the September 2010 Site visit is consistent with the findings of others, particularly Drs. Dow and Arscott's finding water in the upper reaches of RR2 and RR3 after the streams were filled, and testimony that water travels through the hayfield into Blackwell Creek. Their

testimony, except where otherwise indicated, has been fully credited.

B. David Walters and Seth Walters

The court finds David and Seth Walters to be credible except in one respect where they were mistaken. David and Seth Walters testified that once the EPA inspectors left the Site on September 9, 2010, they finished installing the silt fence and then halted operations for several days while Metheny could research whether a CWA section 404 permit was needed for their work. David Walters Test., Tr. at 106 (Aug. 15, 2017); Seth Walters Test., Tr. at 54 (Aug. 18, 2017). David and Seth Walters also testified that the invoices prepared by Seth Walters were accurately prepared. David Walters Test., Tr. at 112 (Aug. 15, 2017); Seth Walters Test., Tr. at 56-58 (Aug. 18, 2017). Those invoices specify that for the three days after the EPA inspectors left, Walters Excavating cleared brush for a new haul road so that the place where the sediment pond was to be built could be located and so that fill could be brought to the Site. Seth Walters Test., Tr. at 58.

C. Larry Carr

The court finds the testimony of Larry Carr to be credible except to the extent it is internally inconsistent. While Carr generally appeared to be truthful, his testimony included contradictory statements regarding how often and in what circumstances he witnessed water flowing across the hayfield. For example, Carr stated "when we had hard rains or any kinds of rains, you know, that it migrates to this area [indicating the center line of the hayfield] going down to the bottom of the picture into . . . [Blackwell Creek]." Carr Test., Tr. at 133; See also id. at 134 (making a similar statement). Carr later stated in his testimony, "[T]he only time we get any moisture is after a pretty heavy rain." Id. at 136. Carr also described watching rain events there with his family: "I know from memory when the kids were smaller . . . we'd have one of those storms. And it happened so seldom that it was an event the whole family would go out and look over and see it come gushing." Id. at 145

Despite his testimony that rain water travels across the hayfield and into Blackwell Creek and that when his children were younger they watched the "gushing" water events together, he later stated "I've never seen [the water] come clear across the [hayfield]." Id. at 144, 149. After describing how water flows

across the hayfield Carr testified, "[y]ou never physically see water. You just know by the slope of the land . . . that it . . . slopes towards [Blackwell Creek]." Id. at 143.

The court also finds that Carr's testimony relating to his experiences in the hayfield typically referred to the times when he was cutting hay or performing other operations that occurred during the summer and required dry conditions. Id. at 129, 134-35, 147. When Carr was asked, "Would you get moisture through that center area of the hayfield in the late winter and early spring?", he responded, "Yes, we do. Yes, we do. That is the area that any moisture, rain or heavy rains, that's the only exit for all that acreage to get to Neal Run through this hayfield, okay." Id. At 134.

The evidence also demonstrates that even when one is in the hayfield, it is difficult to see water flowing through it unless the grass is parted. Pehrman Test., Tr. at 183-84 (Aug. 17, 2017). Finally, Carr's contradictory testimony of not seeing water come across the hayfield, does not account for that factor nor does it account for the visible feature through the hayfield that is observed from numerous aerial photographs taken before and after the Site disturbance and from the visible bed, bank, and

ordinary high water mark on both ends of the hayfield. U.S. Exs. 220, 224, 224, 317-320.

D. Rick Hemann and Jeffrey Lapp

The court credits the testimony of Rick Hemann and Jeffrey Lapp. The demeanor of each of these witnesses was forthright and appeared concerned with truthfully recounting the events of this case. Their testimony, except where otherwise specifically indicated, has been fully credited.

E. Ronald Foster

The court finds the credibility of Ronald Foster to be in limited respects noted below as somewhat diminished. The court finds Foster's testimony regarding the Pad 4 area and the hayfield during his visits after the installation of the sediment pond credible to the extent that his testimony is confirmed in the videos he took on September 4 and 11, 2015. Foster Test., Tr. at 25; Pls.' Exs. 162-164, 167-73, 176, 182, 185, 194, 198, 205. Foster's testimony regarding his efforts to work with the EPA and the Corps to remedy the alleged CWA violations after the Pad 4 work is also credible.

The court finds that Foster's testimony is less than credible regarding the formalities of M&P and Foster Farms and his role in each organization. Only Foster's telephone number appeared on the billboard advertising development opportunities at Neal Run, even though Foster claims to have no managerial role in Foster Farms and there is no indication from the billboard that the parcel is owned by two separate entities. Foster Test. Tr. at 72-73, 110-112 (Aug. 16, 2017).

F. Larry George

The court finds the credibility of Larry George to be somewhat diminished. George appeared to have an unfavorable view of the EPA for the Pad 1 CWA violations that occurred after he formed Endurance. George Test., Tr. at 65-66 (The EPA "had issues with me.") (Aug. 18, 2017).

George's testimony also is inconsistent with other evidence in the record. Although witnesses for both defendants and plaintiffs testified that RR4 flowed seasonally on the Site, George testified that he never saw a flowing creek in the Pad 4 area. George Test., Tr. at 68-69. The evidence also demonstrates that even when one is in the hayfield, it is difficult to see water flowing through it unless the grass is parted. Pehrman Test., Tr. at 183-84 (Aug. 17, 2017). George did not own the

hayfield and generally crossed it when he was younger to hunt and in recent years, to ride ATVs with his wife. George Test., Tr. at 64, 74. Finally, George's testimony relating to flow across the hayfield, does not account for the visible feature through the hayfield that is observed from numerous aerial photographs taken before and after the Site disturbance and the bed, banks, and ordinary high water mark that are visible on both ends of the hayfield. U.S. Exs. 220, 224, 224, 317-320.

G. Douglas Hatfield

The court finds the credibility of Hatfield to be somewhat diminished. Hatfield testified that most of his observations of the hayfield occurred from Carr's driveway or the road, which are located on the far side of Blackwell Creek. Hatfield Tsst., Tr. at 94. When Hatfield does take his tractor to the hayfield, it is in July through October, not when RR4 is alleged to seasonally flow. Id. at 95. The evidence also demonstrates that even when one is in the hayfield, it is difficult to see water flowing through it unless the grass is parted. Pehrman Test., Tr. at 183-84 (Aug. 17, 2017). When the hayfield is growing, Hatfield testified that the grass can be too tall to see coyotes in the hayfield. Hatfield Test., Tr. at 94-95. Finally, Hatfield's testimony relating to flow across the

hayfield, does not account for the visible feature through the hayfield that is observed from numerous aerial photographs taken before and after the Site disturbance. U.S. Exs. 220, 224, 224, 317-320.

H. Jacob White

The court finds that the credibility of Jacob White is somewhat diminished. White's testimony appeared to be influenced by Foster, as demonstrated through the revisions Foster suggested be made to the letters written by White that were sent to the EPA and the Corps. White Test., Tr. at 108-09, 115 (Aug. 18, 2017). White testified that he sent the draft letters to Foster, and the two discussed revisions to the letters. Id. at 109. The letters, as revised by Foster, contained statements that were not true, including that the streams were classified as non-relatively permanent waters, when RR4 was classified as a relatively permanent water in the Corp Jurisdictional Determination ("JD") report. Id. One of the letters also states that the Corps' JD determination only discussed the Pad 4 streams' proximity to a traditional navigable water, when White provided in the Randolph Report, hydrogemorphic functions, which look at the functionality of landscape features. Id. at 114-115. White also testified that he did not consider the hayfield in the Randolph Report's

determination that the Pad 4 streams were jurisdictional. Id. at 110. However, on February 18, 2011, White took a photo of the hayfield from the edge of Pad 4, which depicts prominent bed, bank, and ordinary high water marks extending into the hayfield. Id.; U.S. Ex. 165 at MPS001105.

To the extent that White testified that his opinion about whether the Pad 4 streams were jurisdictional changed after reading the GAI Report, the court does not find this testimony persuasive. In making this statement, White incorrectly assumed that the GAI Report was the only report that provided information regarding flow across the hayfield. White Test., Tr. at 104, 118 (Aug. 18, 2017). However, White was not aware that Pehrman composed a report in which he witnessed water flowing across the hayfield when he visited the Site in July 2015. Id.

I. David Arscott, Charles Dow, Peter Stokely, and Dane Pehrman

The court credits the testimony of David Arscott, Charles Dow, Peter Stokely, and Dane Pehrman regarding their visits to the Site and surrounding areas. The demeanor of each of these witnesses was forthright and appeared concerned with truthfully recounting the events of this case. Their statements were consistent with the record evidence, including photographs taken from their visits. Although the court does not credit all

of their expert opinions, the court finds their testimony regarding their findings at the Neal Run Crossing property and surrounding areas to be credible.

J. Daniel Metheny

The court does not find the testimony of Dan Metheny credible. Though he had no experience in stream delineation or wetlands delineation, he nevertheless advised Foster that a § 404 permit was unnecessary despite being informed that EPA inspectors had just been on the scene and had indicated to Foster's excavating crew that such a permit was needed. The testimony of Metheny at trial that there were no indications of permanent water and that his original assessment was correct was simply an effort by him to bolster his initial erroneous assessment and was made without taking into account the considerable evidence otherwise from Foster's own experts as embodied in the Randolph Report and the findings of Dana Pehrman, as well as the evidence presented by the EPA.

K. Jayme Fuller

The court finds credible the testimony of Jayme Fuller, an assistant project manager of GAI, a consulting expert engaged by Foster who was acting for M&P, though her testimony and the GAI

report are of little significance. Foster engaged GAI to conduct a stream delineation analysis on the hayfield.

Ms. Fuller did so by digging soil test pits to determine groundwater flow. The work was done in May 2013. The results were that groundwater was found alongside the stream channel on the upper end of the hayfield. No soil test pit was dug on the stream channel at the lower end of the hayfield. With respect to the 121-foot center of the hayfield between those two channels, Ms. Fuller dug two soil test pits to determine groundwater flow and found none. In turn, GAI has reported that there was no stream channel for the 121-foot center of the hayfield. The court does not find the GAI analysis persuasive inasmuch as it simply reports the results found on a relatively late spring day when the soil would normally have been firm enough to permit the cutting of hay.

III. CONCLUSIONS OF LAW

A. Governing Law

In 1972, Congress passed the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251. The CWA prohibits the discharge of pollutants into navigable waters, which are defined as "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7).

In order to prevail under the CWA, defendants must establish that plaintiffs are: (1) persons that (2) discharged a pollutant (3) from a point source (4) to a water of the United States (5) without a CWA Section 404 permit. 33 U.S.C. §§ 1311(a), 1344(a).

Under the CWA, "person" means "an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body." 33 U.S.C. § 1362(5). A person is liable for CWA violations if he has: (1) performed the work; or (2) exercised responsibility for or control over performance of the work. U.S. v. Lambert, 915 F. Supp. 797, 802 (S.D. W.Va. 1996).

The CWA defines "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source. . . ." 33 U.S.C. § 1362(12). Pollutant means "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." 33 U.S.C. § 1362(6). Courts have concluded that fill material is a pollutant under the CWA and plaintiffs do not contest this assertion. See, e.g., United States v. Pozsgai, 999 F.2d 719, 724 (3d. Cir. 1993).

A point source is defined in the CWA as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). Under the CWA, "[t]he concept of a point source embraces the broadest possible definition of any identifiable conveyance from which pollutants might enter waters of the United States. As such, bulldozers, backhoes, draglines, and other earthmoving equipment are all point sources under the CWA." Lambert, 915 F. Supp. at 802 (internal citations and quotations omitted).

Under the CWA, "navigable waters" are defined as "waters of the United States." 33 U.S.C. § 1362(7). Waters of the United States, as most recently defined by the plurality opinion by four justices in Rapanos v. United States, 547 U.S. 715 (2006), include: (1) traditional navigable waters; (2) waters connected to a traditional navigable water that have a "relatively permanent flow"; and (3) wetlands that have a "continuous surface connection" to relatively permanent waters. In Justice Kennedy's concurring opinion in Rapanos, they also include (4) waters or wetlands that have a "significant nexus" to a traditional navigable water.[3]

Under the "relatively permanent flow" test, jurisdiction is found over "relatively permanent, standing or flowing bodies of water . . . forming geologic features" and not "ordinarily dry channels through which waters occasionally or intermittently flows." Rapanos, 547 U.S. at 732. This does not "necessarily exclude streams, rivers, or lakes that might dry up in extraordinary circumstances, such as drought. . . . [or] seasonal rivers, which contain continuous flow during some months of the year but no flow during dry months." Id. at 732, n. 5 (internal

[3] For a discussion of the plurality and concurring opinions in Rapanos and the decision by the court to apply both standards, see pages 12-21 of court's August 14, 2017 memorandum opinion and order on the parties' motions for summary judgment.

quotations omitted). Courts generally have found tributaries that hold water for at least three months of the year to be sufficient to meet the "relatively permanent" test. See e.g., United States v. Mlaskoch, No. 10-2669, 2014 WL 1281523, at *17 (D. Minn. Mar. 31, 2014) (Tributaries with "seasonal flow for at least three months" is sufficient to meet the Rapanos "relatively permanent" standard.); United States v. Brink, 795 F. Supp. 2d 565, 579 (S.D. Tex. 2011) (finding that a seasonal creek satisfied the Rapanos plurality's definition of a relatively permanent water); Sequoia Forestkeeper v. U.S. Forest Serv., No. 09-392, 2011 WL 902120, at *5 (E.D. Cal. Mar. 15, 2011) (finding a creek to be "relatively permanent" even where it "dr[ies] up in the summer months"); see also United States v. Moses, 496 F.3d 984, 989 (9th Cir. 2007) (qualifying a tributary that holds water for only two months a year as a water of the United States).

Under the significant nexus test, "navigable waters" extends to "a water or wetland [that] . . . possesses a 'significant nexus' to the waters that are or were navigable in fact or that could reasonably be made so." Rapanos, 547 U.S. at at 780 (Kennedy, J., concurring) (citing Sold Waste Agency of Northern Cook Cnty. v. Army Corps of Engineers, 531 U.S. 159 (2001)). "The required nexus [under the significant nexus test] must be assessed in terms of the [CWA's] goals and purposes.

Congress enacted the law to 'restore and maintain the chemical, physical, and biological integrity of the Nation's waters,' 33 U.S.C. § 1251(a), and it pursued that objective by restricting dumping and filling in 'navigable waters,' §§ 1311(a), 1362(12)." Id. at 779-80. "[T]he significant nexus test does not require laboratory tests or any particular quantitative measurements to establish significance." Precon Development Corporation v. U.S. Army Corps of Eng'rs. ("Precon I", 633 F.3d 278, 294 (4th Cir. 2011). The evidence need only support a finding that effects on water quality are not "speculative or insubstantial." Precon Dev. Corp. v. Army Corps of Eng'rs, 603 F. App'x 149, 152 (4th Cir. 2015) ("Precon III").

The contribution of flow, sediment, and other material to downstream waters, the support and exchanging of aquatic life with downstream waters, and the processing of nutrients, materials and pollutants are activities that can form a significant nexus with traditional navigable waters. See United States v. Donovan, 661 F.3d 174, 186 (3d. Cir. 2011); United States v. Cundiff, 555 F.3d 200, 210-11 (6th Cir 2009).

B. Conclusions

1. "Persons"

Plaintiffs do not dispute that they are "persons" within the meaning of the CWA. Answer to Counterclaim, ¶ 42. Foster Farms and Marking & Planning Specialists exercised responsibility for the work as owners of the Pad 4 areas where the streams were filled. Foster hired Fox Engineering to design the plans for the pad construction and hired Walters Excavation to clear, fill, and level the Site. M&P paid Walters Excavating for the work on Pad 4. The court concludes that Foster Farms, M&P and Ron Foster are "persons" under the CWA.

2. "Discharge of Pollutant"

The court finds that plaintiffs' activities of hiring and directing Walters Excavating to place excavated dirt, rocks, and other fill material into the Pad 4 streams and construction of a sediment pond constitutes a "discharge" of "pollutants" under the CWA.

3. "From a Point Source"

The court concludes that the bulldozers, dump trucks, and other equipment used to deposit rock, dirt, and fill material on the Site qualify as discharge "from a point source."

4. "Into Waters of the United States"

a. "Relatively Permanent Flow"

The court finds that the evidence establishes that prior to being filled, RR4 flowed for at least four months a year on the Site and was connected to the navigable portion of Neal Run, a traditionally navigable water.

b. "Significant Nexus"

The court additionally finds that: (1) RR1, RR2, RR3, and RR4 support and exchange aquatic life with downstream waters; (2) produce and export water, sediment, and solutes downstream, and (3) support aquatic biofilms that process nutrients, minerals, and pollutants, some of which are transported downstream. These streams significantly affect the chemical, physical, and biological integrity of the navigable portion of Neal Run and therefore are "waters of the United States."

5. "Without a Permit"

The parties do not dispute that plaintiffs did not obtain a Section 404 permit prior to filling the Pad 4 streams.

C. Summary

The court, accordingly, concludes that defendants have proven that plaintiffs have violated the Clean Water Act by a preponderance of the evidence, in that the plaintiffs filled waters of the United States without a Section 404 Clean Water Permit to do so when they filled four headwater streams in 2010 on the Neal Run Crossing Property.

The Clerk is directed to transmit copies of this order to counsel of record and any unrepresented parties.

ENTER: August 29, 2019

John T. Copenhaver, Jr.
Senior United States District Judge